

EXHIBIT A

Write in Dark Ink on Front Side Only, Please

hp		INVENTION DISCLOSURE		PAGE ONE OF <u>4</u>	
PDNO <u>10011682</u>		DATE RCVD _____		ATTORNEY <u>EAA</u>	
Instructions: The information contained in this document is COMPANY CONFIDENTIAL and may not be disclosed to others without prior authorization. Submit this disclosure to the HP Legal Department as soon as possible. No patent protection is possible until a patent application is authorized, prepared, and submitted to the Government.					
Descriptive Title of Invention: <u>Ink Emissions Condenser and Collection System for an Ink Jet Printer</u>					
Name of Project: <u>FALCON</u>					
Product Name or Number: <u>Scanning/Page Wide Array</u>					
Was a description of the invention published, or are you planning to publish? If so, the date(s) and publication(s): _____					
Was a product including the invention announced, offered for sale, sold, or is such activity proposed? If so, the date(s) and location(s): _____					
Was the invention disclosed to anyone outside of HP, or will such disclosure occur? If so, the date(s) and name(s): _____					
If any of the above situations will occur within 3 months, call your IP attorney or the Legal Department now at 1-898-4919 or 970-898-4919.					
Was the invention described in a lab book or other record? If so, please identify (lab book #, etc.) _____					
Was the invention built or tested? If so, the date: <u>Condenser system was built and tested</u>					
Was this invention made under a government contract? If so, the agency and contract number: _____					
Description of Invention: Please preserve all records of the invention and attach additional pages for the following. Each additional page should be signed and dated by the inventor(s) and witness(es).					
A. Description of the construction and operation of the invention (include appropriate schematic, block, & timing diagrams; drawings; samples; graphs; flowcharts; computer listings; test results; etc.)					
B. Advantages of the invention over what has been done before.					
C. Problems solved by the invention.					
D. Prior solutions and their disadvantages (if available, attach copies of product literature, technical articles, patents, etc.).					
Signature of Inventor(s): Pursuant to my (our) employment agreement, I (we) submit this disclosure on this date: [].					
<u>490718</u>	<u>MICHEL A. RIOU</u>	<u>[Signature]</u>	<u>312-6468</u>	<u>5400-S643</u>	
Employee No.	Name	Signature	Telnet Mailstop	Entity & Lab Name	
<u>464122</u>	<u>DAVID B LARSON</u>	<u>[Signature]</u>	<u>212-2176</u>	<u>5400-S643</u>	
Employee No.	Name	Signature	Telnet Mailstop	Entity & Lab Name	
Employee No.	Name	Signature	Telnet Mailstop	Entity & Lab Name	

(If more than four inventors, include additional information on another copy of this form and attach to this document)

Form 3.1 idf.doc, rev.

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INVENTION DISCLOSURE		COMPANY CONFIDENTIAL		PAGE 2 OF 4	
Signature of Witness(es): (Please try to obtain the signature of the person(s) to whom invention was first disclosed.)					
The invention was first explained to, and understood by, me (us) on this date: []					
Full Name		Signature		Date of Signature	
Wade Antoine Powell		Wade A. Powell			
Full Name		Signature		Date of Signature	
JOHN ANTONIO BALSACCA		John B. B.			
Inventor & Home Address Information: (If more than four inventors, include addl. information on a copy of this form & attach to this document)					
Inventor's Full Name					
Michel Riou					
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Do you have a Residential P.O. Address? P.O. BOX		City		State Zip	
Greeted as (nickname, middle name, etc.)		Citizenship			
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DAVID		USA			
Inventor's Full Name					
Street					
City					
State		Zip			
Do you have a Residential P.O. Address? P.O. BOX		City		State Zip	
Greeted as (nickname, middle name, etc.)		Citizenship			
Inventor's Full Name					
Street					
City					
State		Zip			
Do you have a Residential P.O. Address? P.O. BOX		City		State Zip	
Greeted as (nickname, middle name, etc.)		Citizenship			

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Mike Riou

A: Description of Invention

New high throughput writing systems will require heaters to drive off moisture from the paper. This is required to achieve handleability and stacking goals for the output. Once the paper and ink is heated, the high humidity air must be collected, processed and exhausted to the atmosphere. The humid air is a mixture of water from the ink, paper, solvents from the ink, and ink aerosol. This invention collects the heated vapours, condenses the water and solvents, filters the aerosol, and pumps and stores the collected condensate.

(At some of the proposed throughputs, ink usage (for scanning) may reach 1.9 L/hr. Assuming 80% of the ink is driven off during heating, up to 1.5 L/hr may have to be processed.)

Note – Ink is approx 80% water, 15-18% solvent, and the remainder is dye, biocide, etc. When it is heated, the vapour is about the same composition, with the most of the dye staying in the paper. The vapour is ~80% water, 20% solvents.

(See attached diagram for a schematic of system.)

B: Advantages of Invention:

- 1) Previous designs did not have any condensation systems due to a lack of heaters and/or relatively low throughputs. The only system was a fan and filter to control aerosol.
- 2) The humid air is controlled – evacuated from the printzone and processed. This will minimize the amount of water condensing on critical surfaces and causing print quality problems.
- 3) Waste condensate can be stored and disposed of correctly.
- 4) Ink solvents can be prevented from entering the atmosphere around the printer in high quantities. Note that there are limits to the amount of some solvents in the air. Some solvents do not have limits yet. Also, some solvents may not be harmful, but have annoying odours that may be unacceptable.

C: Problems Solved by the Invention:

- 1) The humid air is controlled – evacuated from the printzone and processed. This will minimize the amount of water condensing on critical surfaces and causing print quality problems.
- 2) Waste condensate can be stored and disposed of correctly.

D: Prior Solutions and their Disadvantages:

The only solution I know of is an aerosol fan to remove air from the interior of the printer. We have never cooled or condensed vapour.

Witnesses:

Wayne A. Powell
John Brown

EMISSIONS CONDENSER AND STORAGE SYSTEM

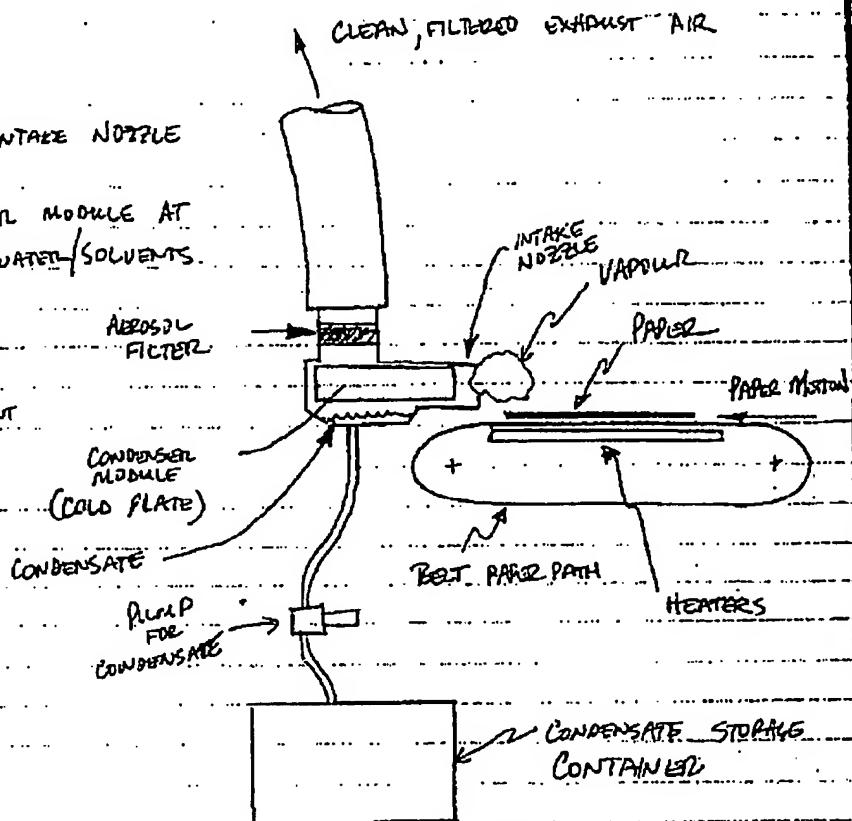
Book No. _____

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M. P. Jones

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- ① AIR (VAPOUR) SUCKED INTO INTAKE NOZZLE
- ② VAPOUR RUNS ACROSS CONDENSER MODULE AT LOW TEMP TO CONDENSE WATER/SOLVENTS.
- ③ AIR IS FILTERED
- ④ AIR IS RELEASED TO AMBIENT OFFICE CONDITIONS
- ⑤ CONDENSATE IS PUMPED TO A RESERVOIR



(THIS RESERVOIR MAY BE FIXED OR REPLACEABLE DEPENDING UPON LIFE OF PRINTER)

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M. P. Jones

Handwritten signature

Witnesses:

Wade A. Powell

John Barry

To Page No. _____

Read & Understood by me, _____

Date _____

Invented by M. P. Jones

Date _____